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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NADYA BELCHAVA and AHMAD R. HADBA<sup>1</sup>

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Appeal 2015-002346  
Application 11/636,222  
Technology Center 1600

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*Before* ULRIKE W. JENKS, JOHN G. NEW, and JOHN E. SCHNEIDER,  
*Administrative Patent Judges.*

NEW, *Administrative Patent Judge.*

DECISION ON APPEAL

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<sup>1</sup>Appellants state the real party-in-interest is Covidien LP. App. Br. 1.

## SUMMARY

Appellants file this appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 3, 4, 6–9, 11–14, and 17–19.<sup>2</sup> Specifically, the claims stand rejected as unpatentable under 35 U.S.C. § 103(a) as being obvious over the combination of Fuller et al. (WO 89/00589, January 26, 1989) (“Fuller”) and Sawhney et al. (US 6,352,710 B2, March 5, 2002) (“Sawhney”).<sup>3</sup>

Claims 1, 3–4, 6–9, 11–14, and 17–19 also stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Matsuda et al. (US 5,457,141, October 10, 1995) (“Matsuda”), Marinovic (US 4,743,632, May 10, 1998) (“Marinovic”), and Sawhney.

We have jurisdiction under 35 U.S.C. § 6(b)

We AFFIRM.

## NATURE OF THE CLAIMED INVENTION

Appellants' invention is directed to sprayable compositions, having reduced viscosity, which may be used as adhesives or tissue sealants.

Abstract.

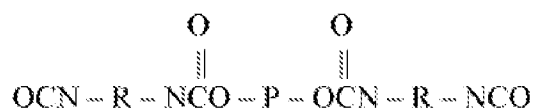
## REPRESENTATIVE CLAIM

Claim 1 is representative of the claims on appeal and recites:

1. A sprayable composition comprising:  
  
a first component of the formula:

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<sup>2</sup> Claims 2, 5, 10, 15, 16, and 20 are canceled. App. Br. 12–16.



wherein P is a polyester; and R is an aliphatic or aromatic group;

a viscosity-reducing amount of a polar solvent;

a second component comprising at least one amine group selected from the group consisting of N-ethylethylenediamine, N,N'-diethylethylenediamine, ethanolamine, N-ethylethanolamine, N-methylmorpholine, pentamethyl diethylenetriamine, dimethylcyclohexylamine, tetramethylethylenediamine, 1-methyl-4-dimethylaminoethylpiperazine, 3-methoxy-N-dimethylpropylamine, N-ethylmorpholine, diethylethanolamine, N-cocomorpholine, N, N-dimethyl-N', N'-dimethylisopropylpropylene diamine, N, N-diethyl-3-diethyl aminopropylamine, dimethyl-benzyl amine, and combinations thereof; and

a polar drug.

App. Br. 12.

## ISSUES AND ANALYSIS

We agree with, and adopt, the Examiner's findings and conclusion that the appealed claims are obvious over the cited prior art references. We address the arguments raised by Appellants on appeal below.

A. Rejection of claims 1, 3,4, 6–9, 11–14, and 17–19 over Fuller and Sawhney

*Issue 1*

Appellants argue the Examiner erred in finding the combination of Fuller and Sawhney teach or suggest the limitations of claims 1, 3,4, 6–9, 11–14, and 17–19. App. Br. 7.

*Analysis*

Appellants argue the adhesives taught by Fuller neither teach nor suggest the inclusion of a polar drug as recited in claims 1, 9, and 17. App. Br. 7.

Appellants also argue that Sawhney fails to remedy the deficiencies of Fuller. App. Br. 7. Appellants contend that, although Sawhney discloses polymeric tissue sealants, which may include biologically active materials, Sawhney neither teaches nor suggests the recited polymeric materials. *Id.* Appellants further contend that Sawhney provides a laundry list of biologically active materials, spanning several columns of the Sawhney patent. *Id.* (citing Sawhney cols. 12–14, ll. 50–11). Appellants argue that there are no directions or reasons provided in either Sawhney or Fuller that would lead a person of ordinary skill in the art to select salicylates from the extensive list of bioactive agents disclosed by Sawhney as suitable for inclusion in Fuller’s sealants. *Id.* at 7–8. Therefore, Appellants allege, it is only through the use of impermissible hindsight that compositions having polar drugs such as salicylates would be chosen and combined with Fuller’s materials. *Id.* at 7, 9.

The Examiner responds that Fuller teaches polyisocyanates that are within the scope of the first component of Appellants' claimed composition. Ans. 2–3 (citing Fuller 5, 9). The Examiner finds Fuller teaches the adhesive formulation further contains curing agents and initiators including diethanolamine, and catalysts including N-methylmorphiline, both of which compounds are claimed as second components. *Id.* at 3 (citing Fuller 6, 13, claim 6). The Examiner further finds Fuller teaches solvents, including methyl ethyl ketone and dimethyl formamide and others. *Id.* (citing Fuller 14–15 line 4). Finally, the Examiner finds Fuller teaches its compositions are sprayable. *Id.* (citing Fuller 20). The Examiner therefore finds Fuller teaches a sprayable composition containing first and second components commensurate with the scope of Appellants' claimed compositions. *Id.*

The Examiner finds Sawhney teaches the incorporation of drugs, including polar drugs such as salicylates, into surgical adhesives. Ans. 3. The Examiner therefore concludes that it would have been obvious to a person of ordinary skill in the art to combine the teachings of Fuller and Sawhney, because Sawhney teaches that it is advantageous to incorporate biologically active agents into surgical adhesives to promote wound healing. *Id.*

We agree with the Examiner. As an initial matter, with respect to Fuller, Appellants state merely that Fuller neither teaches nor suggests inclusion of a polar drug. However the Examiner did not rely upon Fuller for this limitation, rather the Examiner relied on the teachings of Sawhney to support this limitation. *See* Final Act. 4–5. Appellants' Brief is silent with respect to the limitations for which the Examiner actually relied upon Fuller's teachings to support, *viz.*, the sprayable first and second components

of Appellants' claimed composition (i.e., everything *but* the polar drug). Because Appellants advance no argument, nor adduce any evidence to suggest that the Examiner erred in these findings, we accept and adopt the Examiner's findings in this respect.

Sawhney teaches: "Biologically active materials may be included in any of the coatings described herein, as ancillaries to a medical treatment (for example, antibiotics) or as the primary objective of a treatment (for example, a gene to be locally delivered)." Sawhney col. 12, ll. 51–55.

Sawhney teaches, as Appellants argue, a broad variety of possible biologically-active agents:

Specific materials include antibiotics, antivirals,.... Specific examples of these compounds include angiotensin converting enzyme inhibitors, prostacyclin, heparin, salicylates, nitrates, calcium channel blocking drugs, streptokinase, urokinase, tissue plasminogen activator (TPA) and anisoylated plasminogen activator (TPA) and anisoylated plasminogen-streptokinase activator complex (APSAC), colchicine and alkylating agents, and aptomers.

Sawhney col. 13, ll. 11–28. Appellants allege that the Examiner arbitrarily plucked "salicylates" from this passage and Sawhney's further extended teaching of other biologically-active agents in an impermissible use of hindsight analysis to arrive at Appellants' claimed composition. *See App. Br. 7–9.*

However, the limitation in question in Appellants' appealed claims is described simply as a "polar drug." *See, e.g., Claim 1.* Appellants' Specification uses the words "polar drugs" only twice and only in a generic sense:

In addition to the polar solvents described herein, it is envisioned that the first component may also be mixed with polar drugs. As with the polar solvent, the polar drugs may react with the first component and produce an emulsion or solution with a reduced viscosity. The first component may be mixed with the polar drug and optionally a second component in situ to form synthetic drug delivery systems. Any suitable polar drug within the purview of those skilled in the art may be used.

Spec. 7–8. Appellants’ claims and the Specification are consequentially very broad, encompassing any suitable polar drug. As the Examiner points out, polar drugs are well-known in the pharmaceutical arts, and Sawhney implicitly teaches their use (e.g., salicylate) in surgical adhesives. *See* Ans. 4. We find that a person of ordinary skill in the arts would understand that a polar drug is suitable for combination with a polar solvent, as taught by Fuller, and would realize that their incorporation into a surgical adhesive would be of benefit in wound healing. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). We consequently affirm the Examiner’s rejection of the claims on this ground.

B. Rejection of claims 1, 3–4, 6–9, 11–14, and 17–19 over Matsuda, Marinovic and Sawhney

*Issue*

Appellants argue the Examiner erred because the combined, cited prior art references neither teach nor suggest the limitations of the claims. App. Br. 9.



*Argument*

Appellants argue that, although Matsuda is directed to sheet materials coated with surgical adhesives that may be NCO-terminated urethane prepolymers, Matsuda neither teaches nor suggests the second component recited in independent claims 1, 9, and 17. App. Br. 9.

Appellants concede that Marinovic is directed to purified polyether urethane urea polymers as space filling adhesives, and notes that these polymers may be extended with certain amines. App. Br. 9. However, Appellants argue, Marinovic does not teach or suggest the recited sprayable composition including the recited first component with P as a polyester, as recited in independent claims 1 and 9, nor does Marinovic disclose a first component of the recited formula with P as a polyether-ester group, as recited in independent claim 17. *Id.* at 9–10. Furthermore, argue Appellants Marinovic does not teach or suggest the inclusion of a polar drug in its compositions. *Id.* at 10. Appellants point to the Final Office Action, which states Marinovic “is used primarily for the disclosure within that chain extenders (also known as curing or crosslinking agents) such as ethylenediamine were useful additives in surgical adhesive compositions.” *Id.* (citing Final Act. 7).

Appellants also repeat their argument, *supra*, with respect to the alleged deficiencies of Sawhney. App. Br. 10.

Appellants dispute the Examiner’s statement that the Examiner is attacking the references individually, when it is the combination of the references that is being used in the Examiner’s conclusion that the claims are obvious. App. Br. 10. Rather, Appellants contend, there are no directions or reasons in Matsuda and/or Marinovic that would lead a person of ordinary

skill in the art to select salicylates from the extensive list of bioactive agents disclosed by Sawhney as suitable for inclusion in their compositions. *Id.* at 10–11. Appellants allege that it is only through the Examiner’s impermissible hindsight analysis that the particular compositions having polar drugs recited in the present claims be “cherry picked” from among the laundry list of compounds disclosed by Sawhney.

We are not persuaded by Appellants’ arguments. Appellants argue that Matsuda and Mrinovic fail to teach certain limitations of the claims, but those are not the references that the Examiner relied upon as teaching those limitations argued by Appellants. *See* Ans. 6. In other words, Appellants arguments do not correspond to the limitations that the Examiner relied upon the references as teaching. *Id.* Furthermore, we agree with the Examiner that a person of ordinary skill in the art would be motivated to combine the compositions of Matsuda with the “chain extenders,” including ethylenediamine, as a means of adjusting or controlling the cure rate (i.e., the time to harden) of the adhesive. *See* Ans. 6.

Appellants contend that a person of ordinary skill would find neither direction nor motivation to “select salicylates from the extensive list of bioactive agents disclosed by Sawhney as suitable for inclusion in their compositions.” *See* App. Br. 10–11. However, as we have explained *supra*, Appellants’ claims are only limited to “polar drugs,” which are well known in the art, and not to salicylates exclusively. We find that a person of ordinary skill would realize that salicylates are a member of the large genus of polar drugs and conclude that it would have been obvious to a person of ordinary skill to combine polar drugs, as exemplified by salicylates in the teachings of Sawhney with the compositions of Matsuda and Marinovic to

promote wound healing. We consequently affirm the Examiner's rejection of the claims on this ground.

DECISION

The Examiner's rejection of claims 1, 3–4, 6–9, 11–14, and 17–19 as unpatentable under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED